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In the Supreme Court of the United States

OCTOBER TERM, 1982

ARIZONA GOVERNING COMMITTEE FOR TAX DEFERRED ANNUITY AND DEFERRED COMPENSATION PLANS, STATE OF ARIZONA, et al.,

Petitioners,

v.

NATHALIE NORRIS, on behalf of herself and all others similarly situated,

Respondents.

On Writ of Certiorari to the
United States Court of Appeals for the Ninth Circuit

BRIEF OF EIGHT INDIVIDUAL ACTUARIES AS AMICI CURIAE

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Consent to the filing of this brief has been given by counsel for both parties. Letters to this effect have been filed with the Clerk of this Court.

INTEREST OF THE AMICI CURIAE

The actuaries who submit this brief as amici curiae have had extensive experience over the past 30 years with deferred compensation plans, pension plans, profit-sharing plans and other employee benefit plans.[1] Two of the actuaries are employed by large international actuarial consulting firms; two are employed by actuarial consulting units of large international insurance brokers; three are principals of regional actuarial consulting firms; and one is employed by a major labor union. They have been members of and advised federal standard-setting and licensing bodies. Several have been officers or members of the governing boards and policy making committees of the national professional actuarial organizations. The group includes the author of the textbook on pension actuarial mathematics recommended by the actuarial organizations which jointly sponsor the federal Enrolled Actuaries pension examination, and the co-author of the first modern pension mortality table designed to be used both with sex-distinct and sex-neutral rates.

The actuaries who submit this brief work primarily with sponsors of employee benefit plans. Some also consult with insurance companies. All have been employed by insurance companies and, like most other actuaries, have been employed by those who sell insurance or sponsor other

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[1] The eight individual actuaries are: Arthur W. Anderson, Richard Daskais, Donald S. Grubbs, Jr., Paul H. Jackson, Lawrence Mitchell, J. Reuben Rigel, Conrad M. Siegel and Howard Young. Seven are Fellows and one is an Associate of the Society of Actuaries, the organization which is principally responsible for education and examinations of life insurance and pension actuaries. All eight are Enrolled Actuaries under ERISA and are or have been members of the American Academy of Actuaries. Biographies of the actuaries are attached to this brief as Appendix A.

financial security programs. Their experience includes work for both large and small organizations and clients.[2]

The American Academy of Actuaries ("Academy") has filed a brief as amicus curiae which purports to represent the views of the actuarial profession in the United States and purports to describe for this Court "the potential effect of this Court's decision on the various types of plans." (Academy Brief at 2). There is, however, responsible actuarial opinion which differs from the opinions expressed in the Academy's brief.

We submit this brief to assist the Court in evaluating the effect that affirmance of the judgment of the court below would have on the State of Arizona, employer-sponsors of pension plans, and the insurance industry. This brief does not address the legal issues relating to Title VII's application to Arizona's plan, but rather the questions which concern us as actuaries. We agree that gender is an important characteristic in evaluating life expectancy. We do not agree, however, with the prediction of the Academy, the American Council of Life Insurance ("ACLI"), and the National Association of Insurance Commissioners ("NAIC") that prohibition of the use of sex-distinct bases for calculating the amounts of annuity benefits would be unworkable and lead to the "withdrawal" of annuities from deferred compensation plans and retirement programs. It is our opinion that implementation of the judgment of the court below is feasible and need not cause major disruptions in the pension or insurance industry.

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[2] The opinions expressed in this brief are those of the eight actuaries and do not necessarily reflect the opinions of their employers, clients or the actuarial organizations to which they belong. None of the individuals has any direct or indirect financial interest in this case.

SUMMARY OF ARGUMENT

In *City of Los Angeles Department of Water & Power* v. *Manhart*, 435 U.S. 702 (1978), this Court held that a defined benefit pension plan violated Title VII because a female employee was required to contribute more than a similarly situated man, although both received the same monthly pension benefits. In this case, the courts below held that the Arizona deferred compensation plan violated Title VII because a female employee who elects the annuity option offered by the State receives a smaller monthly benefit than a similarly situated male.

In their briefs, the Academy, the ACLI and the NAIC have argued to this Court that, unlike *Manhart*, affirmance of the judgment below would have a major impact on a great variety of plans currently in existence. We recognize, of course, that affirmance would require changes in the operation of certain plans. We do not believe, however, that prohibition of the use of sex-distinct bases for calculating annuity benefits would materially affect the pricing of annuities or disrupt the insurance industry. Arizona could have sponsored a plan that provided equal monthly benefits to males and females, either by specifying that the insurers use sex-neutral rates or by providing annuities for employees on an uninsured basis.

The severe adverse selection predicted by these amici is not borne out by experience. Employees deciding between an annuity or an alternative form of benefit do not generally make actuarial appraisals of their own life expectancy. Nor do they consider that they may be subsidizing another group. Rather, their primary considerations are investment return and income taxes.

A change to sex-neutral rates would not impair any expectations male employees have as to benefits they will

receive upon retirement. Nor would the use of sex-neutral rates in pricing annuities alter significantly the benefit males would receive.

If the judgment below is affirmed, the insurance industry would not be revolutionized. Insurers have in the past protected themselves against adverse experience by including substantial safety margins in annuity premium rates. These margins are required more because of uncertainty as to future investment returns than because of uncertainty as to the mortality of the annuitants; they will be more than sufficient to insulate insurers against lower average mortality rates. In the past, the insurance industry has demonstrated its flexibility and adaptability as approaches to risk classification have changed. There is every reason to expect that it will continue to do so.

ARGUMENT

Introduction

Arizona has established a deferred compensation plan which permits a State employee to realize certain immediate tax savings by deferring receipt of a portion of his or her compensation.[3] The deferred amount remains the property of Arizona until paid to the participant. Participation in the plan and the amount each employee defers are discretionary. A participant may elect to receive his or her benefit (1) in a single sum, (2) in a fixed monthly sum for a specified time period, or (3) in the form of a life annuity. If the participant elects a life annuity, Arizona requires that it be purchased from one of the life insurance companies selected by the State. All the insurance companies selected use annuity purchase rates which differ by sex. As a result, females receive smaller monthly annuity payments than males of the same age who have accumulated the same account balance.

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[3] The Arizona plan is governed by Section 457 of the Internal Revenue Code of 1954, 26 U.S.C. §457 ("Code"). The intent of Section 457 is to allow employees of state and local governments to defer compensation, to obtain a present tax advantage and to enjoy the benefits of present employment at a later date. Employers do not contribute to the plan. Congress has also provided tax advantages for employee retirement plans. Under Section 401(a) of the Code, an employer may establish pension plans, profit-sharing plans and stock bonus plans. Pension plans must provide for payment of benefits over a period of years. 26 C.F.R. §1.401(b)(1). Profit-sharing plans, however, may provide benefits in any form, including lump sums. Therefore, contrary to the impression conveyed by the Academy's brief (Academy Brief at 4), there is no indication of any Congressional intent that all retirement plans provide life annuities.

Under the Arizona plan, a female employee who elects a life annuity option will receive a smaller monthly benefit than a similarly situated male who defers an equal amount of compensation. To receive the same amount of monthly benefit as a similarly situated male, a female must defer a greater amount of compensation and consequently will receive less take home pay.

I.

ARIZONA COULD SUCCESSFULLY OPERATE ITS PLAN ON A SEX-NEUTRAL BASIS.

A. Actuarial Solvency Does Not Depend on the Use of Sex as A Means of Risk Classification for Annuities.

The Academy and the ACLI suggest that elimination of sex as a means of risk classification will destroy the financial soundness of an insurance program. (Academy Brief at 9-11; ACLI Brief at 11, 19). The history of life insurance and annuity pricing practices demonstrates that insurers are able to adapt to conditions and to make reasonably accurate predictions without using every means of risk classification. In the first half of the century, life insurance was priced by age and by underwriting class related to health, occupation, and "morals". Sex and policy size were not used for pricing. It is only relatively recently that the insurance industry has relied upon sex to classify risks in pricing life insurance. Davis, *The Current Position of the American Actuary*, 9 Transactions of the Society of Actuaries 317, 322-23 (1957).

The adoption of sex differences in pricing life insurance was at least in part based on competitive factors. Although females on the average bought smaller life insurance policies than men, insurance companies did not charge greater rates, per $1000 of insurance, for small policies. They justified sex-neutral pricing because the higher

expenses of the smaller policies women purchased were offset by lower mortality. In the 1950's, insurance companies began to price life insurance on the basis of policy size. Shortly after they made this change, some insurers lowered the prices they charged women to reflect their lower mortality rates in order to compensate for price differentials based on policy size. The price reduction for women is often accomplished by an age setback. In pricing life insurance, insurers generally use a three year age setback for females, while in pricing annuities, they use a four to six year age setback. This difference does not simply reflect differences in mortality experience. It indicates that rates also reflect competitors' practices.

Moreover, insurers refrain from using other characteristics to classify risk, such as race, which reflect the cost of bearing the risk assumed, because those classifications are not socially acceptable. Shepherd and Webster, Selection of Risks (1957). At one time, race was a factor in the pricing and availability of life insurance. The major insurance companies limited their issuance of policies to blacks through marketing and other means. Certain specialty companies, primarily located in the South, concentrated on sales to blacks. The result was two classes of insurance companies. *See, e.g.*, 29 Transactions of the Actuarial Society of America 30 (1928); Green, Examination for Life Insurance 109 (1906). With changes in attitude and law, the major insurance companies have issued insurance policies to blacks without price distinctions based on race.

There are other statistically valid factors, such as smoking, weight and medical history, which insurers use to predict longevity in pricing life insurance but which they

do not use in pricing annuities. For example, mortality differentials between smokers and non-smokers on the average exceed those between males and females. Cowell and Hurst, *Mortality Differences Between Smokers and Non-Smokers*, 32 Transactions of the Society of Actuaries 203 (1980). Annuities, however, are generally not priced on the basis of health, or any factors which predict longevity except sex and age.[4] In pricing annuities, insurance companies do not use all the factors, including sex, that are statistically valid predictors of longevity or that are used in pricing life insurance.

B. Investment Return Is the Principal Factor in Pricing Annuities.

The Academy, ACLI and NAIC assert that elimination of sex-distinct mortality tables will interfere with the pricing of annuities. Sex, however, is not a critical factor in the pricing of annuities for employer plans. Interest rates are far more important. Almost all annuity premium rates, such as the rates in the Lincoln National contract, guaranteed in advance under retirement plans, incorporate heavy safety margins to protect the company against adverse experience. The safety margins are required principally because insurers cannot accurately predict the investment return that will be available in the future when they

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[4] In certain situations, insurance companies do consider health and occupation in pricing annuities. For example, differences in mortality by occupation are used in pricing single premium group annuity contracts purchased by terminated pension plans in industries whose employees have below average prospects for longevity. On the other hand, insurance companies have successfully priced annuities without using age. For example, in the pricing of black lung annuities for miners, insurance companies do not use age as a factor, but instead distinguish between those miners who work in anthracite coal mines and in bituminous coal mines. See, *e.g.*, *Pennsylvania Coal Mine Occupational Disease Coverage*, Penna. Dept. of Insurance (Nov. 1982).

receive premiums. The uncertainty of annuitants' mortality is of minor concern. These safety margins are more than adequate to cover any excess of cost of a predominantly female group over the sex-neutral cost of an average group. Therefore, the Academy's assertion that use of sex-neutral tables would mean that the "current practice of guaranteeing annuity purchase rates long in advance would likely have to be modified" is incorrect. (Academy Brief at 17).

Use of sex-neutral rates would result in a small change in the annuities guaranteed in advance to participants. In the case before the Court, Norris is guaranteed a monthly annuity of $320.11 beginning at age 65. A similarly situated male participant is guaranteed a monthly annuity of $354.06. Each of these annuities is a 10 year certain and life annuity. If Lincoln National used sex-neutral annuity rates, we would expect that the amount of annuity it would guarantee a participant of either sex at age 65 would be about $337 monthly, midway between the $320.11 for a female and the $354.06 for a male. If Lincoln National experienced the worst adverse selection—only females electing this annuity—it would be paying $17 per month, or about 5.3%, more for each participant than it would if it used the sex-distinct contract rates.

The Lincoln National rates in effect at retirement can be expected to provide Norris a larger annuity than the annuity based on the advance guaranteed rates.[5] The advance guaranteed rates are based upon 3.5% interest. During December 1982, long term U.S. Treasury Bonds generally yielded about 10½%. Assuming Lincoln National, after allowance for margins, based its actual annuity premium rates on 7.5% interest, Norris' monthly annuity

[5] Section 2.07 of the Lincoln National contract provides that a participant's annuity will be based on its rates in effect at retirement, if more favorable than the advance guaranteed rates.

would be approximately $443 or about 38% more than the $320.11 annuity under the guaranteed rates.

The actual market annuity purchase rates available in 1982 demonstrate that advance guaranteed annuity purchase rates are very conservative. The table below shows the annuity that could have been bought during 1982 from Metropolitan Life Insurance Co. ("Metropolitan"), a company considered to be a major factor in the fixed dollar annuity market. This table also shows annuities based on rates guaranteed in advance by Lincoln National.

10 Year Certain and Life Annuities at Age 65
Monthly Annuity Bought by $53,890.93

Month in 1982 Annuity Purchased	Metropolitan Life Insurance Company—Non-Participating—Fixed Payment Qualified Plans—Group Contract[6]	
	Male	Female
January	$621.20	$583.33
February	621.20	583.33
March	621.20	583.33
April	605.89	567.34
May	650.77	614.22
June	635.26	598.05
July	650.77	614.22
August	643.04	606.10
September	605.89	567.34
October	598.25	559.29
November	575.38	535.53
December	575.38	535.53
Lincoln National Contract Elected by Norris		
As Stipulated—Joint Appendix	354.06	320.11
With One Year Adjustment Per Exhibit 3, §2.07[7]	344.90	312.03

[6] Source: contracts issued to large funding institutions and consultants.

[7] The stipulated amounts do not reflect the premium for a one year adjustment of age pursuant to Section 2.07 of the Lincoln National contract.

The significant difference between the guaranteed premium rates provided to Norris, which produce the annuity amounts in the lower portion of the table, and the 1982 Metropolitan rates suggests that, when Norris does retire, Lincoln National will offer her rates that will produce substantially higher monthly income than either the male or the female rates guaranteed under its contract. The experience of Teachers Insurance and Annuity Association ("TIAA"), whose program for colleges and universities is the largest of its type, provides further evidence that guaranteed rates are not important in determining the amount of retirement benefits which ultimately are paid. The TIAA program calls for equal contributions regardless of sex, mandatory payment of benefits in the form of a life annuity, and sex distinct annuity purchase rates. According to TIAA's figures, guarantees made at the time contributions were paid to TIAA accounted for only 36% to 52% of the amounts paid in 1980 to typical annuitants who retired in 1970-1979. The remainder came from dividends, primarily attributable to favorable investment experience.[8] This example illustrates the magnitude of safety margins in advance guaranteed annuity premiums.

The table also reveals the relative importance of sex and investment return. At age 65, for a 10 year certain and life annuity, there is a price difference of about 7% between males and females (or 3½% between either sex

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[8] See Affidavit of Richard Daskais dated April 21, 1981 in support of Opposition of EEOC to Defendants' Motion Relating To Good Faith Reliance, etc., filed in *Spirt* v. *Teachers Insurance and Annuity Association*, 475 F.Supp. 1298 (S.D.N.Y. 1979), *aff'd*, 691 F.2d 1054 (2d Cir. 1982), *petition for cert. filed*, 51 U.S.L.W. 3394 (U.S. Nov. 9, 1982) (No. 82-791).

and a sex-neutral table calculated on a mix of 50% females and 50% males).[9] Changes in interest rates, however, caused a price variation of 12% within this one year period. Consequently, a 65 year old female could have purchased a larger annuity in January, February, March, May, June, July and August than a 65 year old male with the same accumulation could have purchased in November and December. The volatility in interest rates is such that Metropolitan publishes more than a dozen rate tables for the use of its policyholders and notifies policyholders by telegram on the first day of each month as to which table is applicable for that month. Investment return is therefore more important than sex for pricing annuities.

C. The Requirement of Sex-Neutral Tables Will Not Result in Serious Adverse Selection or Market Disruption.

Briefs of certain amici assert that adverse selection will result from sex-neutral annuity pricing. They predict that male annuitants will object to what they perceive to be a subsidy of female annuitants and will make sophisticated actuarial choices, with the result that (1) the financial security of plans will be threatened; (2) choices will be withdrawn; and (3) employees of one sex will be adversely affected. We disagree with these predictions.[10]

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[9] For example, the April 1982 male annuity of $605.89 is about 7% greater than the female annuity of $567.34. The 50%/50% sex-neutral annuity would be $586.61 or about 3½% greater than $567.34.

[10] The Academy reminisces on the "burial society" experience where premiums and assessments for death benefits were set without regard to the age of an individual member resulting in an "assessment spiral" of costs as the average age of members increased. (Academy Brief at 10). This example is not analogous to the

(footnote continued)

In our experience, employees do not make the decision to elect a life annuity primarily on the basis of actuarial appraisals of their expected longevity. To the contrary, employees frequently incorrectly assess their prospects for longevity. For example, a 65 year-old employee who has heard that life expectancy at birth is 69 may assume only four years of life remain.[11] To such an employee, a life annuity often appears to be a poor choice, whether priced on a sex-distinct or sex-neutral basis. Employees do not avoid life annuities because they believe they are subsidizing another group. No one has suggested, for example, that any programs are having financial difficulties because smokers or overweight people have not elected annuities.

Employees make choices between lump sum payments and annuities primarily on the basis of tax considerations and the investment return they can earn on the lump sum. Also, employees choose among optional forms of annuities for reasons other than an opportunity for adverse selection. For example, in our experience, the choice of a joint and survivor annuity is based upon the prospec-

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(footnote continued)

situation before the Court. The sex related difference in mortality of four to six years is not comparable to the 50 to 70 year age difference of persons for whom the rates would be identical if life insurance were priced on an age-neutral basis. More analogous is the example of premium rates for group life insurance for which employees pay the entire premium. These rates are usually set in five or ten year ranges on a sex-neutral basis without the "revolutionary" consequences predicted.

[11] Life expectancy at 65 is approximately 17 more years. The 69 year life expectancy at birth includes the persons who have died prior to reaching age 65 as well as those who die after reaching age 65.

tive outside income of the spouse, family net assets, the amount of life insurance on the employee's life, and the employee's estimate as to whether he or she can afford to live on the reduced total family income that would be available under a joint and survivor annuity.[12]

The Academy and ACLI argue that an employer retirement plan that used sex-neutral factors would be at a disadvantage because male participants would elect to take their benefits as a lump sum and purchase larger annuities from outside insurers when they retire. (Academy Brief at 18; ACLI Brief at 20). It is unlikely that a male participant in the Arizona plan would elect a lump sum in order to purchase an annuity, because the plan does not offer the same tax benefits to participants who elect a lump sum payment.[13] Moreover, use of sex-neutral rates should not fully offset the advantages to a male employee of purchasing an annuity through Arizona's plan. Because an annuity purchased by the plan is tax-favored and

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[12] A study of the 1958-1960 experience of a large industrial employer prepared by one of us showed that the election of a joint and survivor pension appears to be determined primarily by the size of the employee's pension. The greater the pension the greater the likelihood of joint and survivor election. 13 Transactions of the Society of Actuaries 205 (1961).

[13] All benefits under the Arizona plan and other Section 457 deferred compensation plans are taxable as ordinary income in the year received. Consequently, a participant who elects to receive a substantial lump sum would pay taxes at a higher average rate than he or she would pay if the benefits were spread over a lifetime annuity. In contrast, lump sum benefits under Code Section 401 qualified retirement plans are generally accorded a favorable income tax treatment, either ten year averaging or further tax deferral through a "rollover" to a tax-favored arrangement.

has lower administrative and sales expense, it would almost certainly be greater than the sex-distinct annuity purchased outside the plan.

D. The Arizona Plan Could Have Used Sex-Neutral Rates.

Arizona could have specified that each insurer use sex-neutral rates for annuities for its plan. If it had done so, the insurers could have set adequate annuity premium rates by predicting the mortality of the participants who would purchase annuities. To make these predictions, the insurers could have assumed that a larger percentage of females than males would purchase single life annuities, and that most joint and survivor annuities would be for a male and a younger female.[14] In addition, the insurer could have anticipated that most of the participants with substantial accumulated accounts would purchase annuities in order to retain their significant tax advantages.

As the Academy points out, in developing sex-neutral tables for each defined contribution plan which requires the payment to be in the form of an annuity, the insurer would take into account the proportion of male and female participants. This consideration will not, however, cause the disruptions or dislocations the Academy suggests. (Academy Brief at 18-19). First, as discussed above, *supra* at 13, annuity premium rates change frequently because of changes in investment returns. Any differences caused by the sex mix of the participants would be less

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[14] Our single life annuity assumption is not in conflict with the 50%/50% illustrations of the effects of changing to sex-neutral rates, *supra* at 12-13, because there are more male than female participants. For example, if a plan covers 1,000 males and 500 females, and 20% of the 1,000 males and 40% of the 500 females elect a single life annuity, there will be 200 single life annuitants of each sex.

significant. Second, to the extent that the sex mix of the participants varies materially from the mix the insurer initially used in pricing the annuities, the insurer will make the same type of adjustment it now makes to compensate for variations in investment return.

Alternatively, Arizona could have provided, at no cost to itself, annuities for employees on an uninsured basis. One of us recently recommended to a major statewide deferred compensation plan that it provide life annuities on an uninsured basis as a means of increasing annuities for all participants in the plan. Defined contribution plans which provide life annuities on an uninsured basis have operated for many years. Examples are the plans operated for most colleges and universities in the United States by College Retirement Equities Fund (which, unlike TIAA, is not an insurance company), the thousands of plans operated for many years by National Health and Welfare Retirement Association, and plans of a number of major employers in the airline and securities industries.

It is feasible for an uninsured plan to use sex-neutral annuity rates. For example, the Cooperative Banks Employees Retirement Association in Massachusetts is an uninsured defined contribution plan which uses sex-neutral rates for determining benefits. This plan changed to sex-neutral rates after the *Manhart* decision at the same time as it raised from 8% to 9% the assumed interest rate used to calculate annuities. The change in the interest rate more than compensated for decreases in male benefits caused by elimination of sex-distinct rates. All persons who retired after the date of the change have received larger annuities than they would have under the sex-distinct rates, with greater increases for females. The plan continues to operate on an actuarially sound basis.

II.

AN EQUAL VALUE STANDARD WOULD REQUIRE CHANGES IN GROUP INSURANCE PLANS AND DEFINED BENEFIT PENSION PLANS.

The Academy argues that if this Court affirms the judgment of the court below, there will be significant effects on other plans. The Academy then argues that this Court should construe Title VII to require only that women receive equal value. (Academy Brief at 12-16). If this Court considers the Academy's argument for an equal value standard, it should also consider the implications of using such a standard.

This standard would require changes in benefits in virtually all group insurance. Men and women now receive equal group insurance benefits. In each type of group insurance, there would be a difference in expected value between men as a class and women as a class for any group of employees. Because mortality rates of women are lower than those of men, the amount of life insurance provided to female employees would typically have to be increased; we estimate the increase would be from 30% to 50%. For some employee groups, the value of disability income insurance is greater for women than for men; consequently, certain employers would have to increase the amount of disability income for male employees. For other employee groups, the value of disability income insurance is greater for men than women; in these instances, employers would have to increase the amount for female employees. Under many types of medical expense plans, including those of most large employers, the value of male employees' insurance is greater than that of female employees because a greater percentage of employed males have insured dependents.[15]

[15] For example, under the program of a large industrial client of one of us, 91% of the male employees have dependents, but only 74% of the female employees have dependents.

If an equal value standard were used, in many defined benefit pension plans the benefits of females would have to be increased. For example, many plans provide pensions that are the same percent of salary for all employees. Under such plans, the value of pensions as a percent of salary is usually lower for female employees as a class than for male employees as a class, because females as a class have higher turnover rates and a smaller proportion of females have spouses eligible for survivor benefits. These factors more than offset the females' greater life expectancy.

III.

COMMENTS ON THE IMPACT OF AFFIRMANCE.

Although this case involves only a deferred compensation plan under Section 457 of the Code, the Academy has presented some predictions of the practical impact of this Court's opinion on all defined contribution and defined benefit plans. (Academy Brief at 16-23). It is our opinion that affirmance of the judgment of the court below will not create insurmountable problems with respect to defined contribution or defined benefit plans that are "qualified" retirement plans, *i.e.*, not deferred compensation plans under Section 457 of the Code.

The Academy asserts that defined contribution plans which permit participants to choose between a life annuity and a lump sum would present opportunities for adverse selection. (Academy Brief at 17). Our experience is that the vast majority of employees elect lump sums when they have a choice because of the favorable tax treatment. Annuity premium rates have little effect on the choice. Insurance companies could avoid any significant adverse selection by accurately predicting the sex mix of the small percentage of participants who elect annuities.

The Academy contends that a decision requiring equal monthly benefits would materially affect optional benefits available under defined benefit plans. (Academy Brief at 19-20). However, many defined benefit plans have used sex-neutral option factors for over 20 years.[16]

The Academy suggests that it would be undesirable to use sex-neutral tables to compute benefits under joint and survivor options of defined benefit plans. It notes that similarly situated employees entitled to the same normal monthly pension under plans of different employers would receive different joint and survivor benefits. (Academy Brief at 19). But similarly situated employees of different employers already receive different joint and survivor pensions, primarily because their plans have widely different benefit formulas.

The briefs already filed discuss the effects on Arizona and sponsors of other employee plans if this Court were to order "prospective" or "retroactive" relief in this case. The Academy asserts that prospective relief which required the use of sex-neutral factors for employees who retire after the Court's decision in this case would result in "widespread and substantial adjustments of currently anticipated benefits." (Academy Brief at 27). We disagree.

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[16] These plans often specify a formula for calculating the amount of a participant's joint and survivor annuity, rather than requiring actuarial equivalence to the life annuity. The formula is designed so that the actuarial value of the joint and survivor annuities will be about the same as the actuarial value of the life annuities of the participants who elect them. For example, one formula of this type provides a joint and survivor annuity equal to 79% of the participant's life annuity if the participant and spouse are the same age, with further provision for reducing (or increasing) the 79% factor by .8% for each year that the participant's age exceeds (or is less than) the spouse's age.

Under defined contribution plans, expectations as to benefits are not firm prior to retirement because of the uncertainty of investment earnings.[17] For example, the values of the accounts of those employees who have invested in common stocks, in either a trust fund or an insurance company "separate account," have changed more between August and November of 1982 (when stock prices rose 30% to 35%) than they would change because of the use of sex-neutral tables.

Under defined benefit plans, only optional forms (*e.g.*, joint and survivor annuities) will be affected. Employees' expectations, however, are based almost entirely on what they would receive under the normal form of annuity.

If Arizona is required to increase annuities which have already commenced, it will incur some costs. The record in this case contains no evidence of what those costs may be. The Academy asserts that the cost of "topping off" to all retirement plans has been estimated "at anywhere from in excess of $1 billion to several times that amount annually". (Academy Brief at 26). The ACLI refers to "an in-

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[17] The Court in *Spirt* v. *Teachers Insurance and Annuity Association*, 691 F.2d 1054, 1068-69 (2d Cir. 1982) rejected on two grounds the argument that males in either the TIAA or CREF plans could have expectations of receiving benefits based on sex-distinct mortality tables. In the first place, TIAA-CREF distributed literature which emphasized the difficulty in accurately predicting the amount of retirement annuity income an individual participant could expect to receive. Second, the minimal monthly payments TIAA guaranteed were so low, *viz.*, *a* 2½% return on investments, that the males' expectation of receiving the guaranteed benefit would not be jeopardized by "the relatively minor" changes in the value of past benefits the court's order would require.

ternal study conducted by the Council" which "estimates that a prohibition against using sex-specific actuarial tables could increase the costs of retirement plans by as much as two billion dollars per year". (ACLI Brief at 3). No source or basis is provided for these estimates.

CONCLUSION

Assuming that the judgment below is affirmed, there need not be major disruptions in the pension or insurance industry. Implementation of the judgment below is feasible.

Respectfully submitted,

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APPENDIX A

Biographies of the Eight Individual Actuaries

Introduction

The Society of Actuaries is the dominant American and Canadian educational and examination organization for actuaries in the life, health, and pension fields. Completion of all its examinations leads to Fellowship in the Society. Each of the eight actuaries is a Fellow of the Society except for Mr. Anderson who is an Associate. Messrs. Grubbs and Jackson have been members of the Board of Governors of the Society.

The Conference of Actuaries in Public Practice is an organization for consulting actuaries whose requirements for Fellowship generally include Fellowship in the Society and consulting experience. Six of the eight actuaries are Fellows of the Conference; Messrs. Rigel and Young are not. Mr. Mitchell is a past president of the Conference and Mr. Siegel is currently a vice president of the Conference.

All eight are Enrolled Actuaries under ERISA.

Six of the eight actuaries are Members of the American Academy of Actuaries. Messrs. Daskais and Jackson were charter members of the Academy, but have resigned.

Individual Biographies

Arthur W. Anderson is Vice President and Actuary in the Boston office of Johnson & Higgins, a large international firm of insurance brokers and consulting actuaries. He has been a member of the Advisory Committee on Actuarial Examinations of the Joint [U.S. Departments of Labor and Treasury] Board for the Enrollment of Actuaries since 1980, the federal body which enrolls actu-

aries to perform actuarial services under ERISA. He is the author of a textbook on pension plan actuarial mathematics to be published in 1983 by the Society of Actuaries and the American Society of Pension Actuaries. His employment experience includes 18 years of pension consulting for companies of all sizes, and 2 years of life insurance company employment.

Richard Daskais is a consulting actuary in Daskais & Walls, Inc., a Chicago actuarial consulting firm. He has been a member of the Advisory Committee on Actuarial Examinations of the Joint Board for the Enrollment of Actuaries since its formation in 1976. His employment experience includes 25 years of pension consulting, primarily for large companies, and 7 years of life insurance company employment.

Donald S. Grubbs, Jr. is a consulting actuary in the Washington office of George B. Buck Consulting Actuaries, Inc., a large international actuarial consulting firm. He was formerly Director of the Actuarial Division of the Internal Revenue Service and was the first chairman of the Joint Board for the Enrollment of Actuaries. He has 27 years of pension actuarial experience, working with plans of all sizes.

Paul H. Jackson is a consulting actuary in the Washington office of The Wyatt Company, a large international actuarial consulting firm. He has written more than 30 papers for professional actuarial journals and employee benefit journals and several chapters for textbooks. He is co-author of the UP-1984 mortality table which is one of the principal tables used for pension plans; the table was designed to be used on a unisex or sex-distinct basis. His

employment experience includes 18 years of pension consulting primarily for very large companies, and 15 years of life insurance company employment.

Lawrence Mitchell is a consulting actuary in Mitchell & Hartmann, Inc., a Los Angeles actuarial consulting firm. His employment experience includes 18 years of pension and insurance company consulting, for organizations of all sizes, and 9 years of life insurance company employment.

J. Reuben Rigel is a consulting actuary in Powers, Carpenter & Hall Inc., a St. Louis consulting actuarial unit of Corroon and Black, a large international firm of insurance brokers and consultants. His employment experience includes 8 years of pension consulting for companies of all sizes, and 8 years of life insurance company employment. He has been in the private practice of law.

Conrad M. Siegel is a consulting actuary in Conrad M. Siegel, Inc., a Harrisburg, Pa., actuarial consulting firm. He has been a member of federal and state government consultant and research committees. His employment experience includes 23 years of pension consulting for companies of all sizes, and 3 years of life insurance company employment.

Howard Young is special consultant to the president of the International Union, United Automobile, Aerospace and Agricultural Implement Workers of America, and is also director of its Social Security Department. He joined the UAW staff in 1960 and (with other employment 1971-1974) has had a wide range of assignments in public economic and social policy as well as in collective bargaining and employee benefits. He has had 10 years of life insurance company employment.